

Application No.: 09/904,163

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AMENDMENTS

In the Specification

Please amend paragraphs [0001], [0039], [0041], and [0042], as shown below:

[0001] This application claims the benefit of priority to co-pending U.S. Patent Application Serial No. 09/724,829 (now abandoned), entitled "APPARATUS AND METHOD TO VERTICALLY ROUTE AND CONNECT MULTIPLE OPTICAL FIBERS" filed on November 28, 2000, and to co-pending U.S. Patent Application Serial No. 09/887,367 entitled "APPARATUS AND METHOD TO METALLIZE, REINFORCE, AND HERMETICALLY SEAL MULTIPLE OPTICAL FIBERS" filed on June 21, 2001 which are both continuations-in-part of co-pending U.S. Patent Application Serial No. 09/654,459 (now abandoned), entitled "APPARATUS AND METHOD TO METALLIZE, REINFORCE, AND HERMETICALLY SEAL MULTIPLE OPTICAL FIBERS" filed on September 1, 2000, each of which is hereby incorporated by reference in ~~their~~ its entirety.

[0039] In another preferable variation using a solder sealant, e.g., various alloys of Indium solder, for hermetic sealing, the optical fibers cables may be routed through a package wall opening vertically and may also be physically reinforced in a lateral direction by a reinforcement plate extending through the package wall opening, attached to the ribbon of optical fibers and the package wall opening by a solder, as discussed in more detail by co-pending U.S. Patent Application Serial No. 09/654,459 (now abandoned), entitled "Apparatus and Method to Metallize, Reinforce, and Hermetically Seal Multiple Optical Fibers" filed on September 1, 2000. It is also discussed in further detail in the co-pending U.S. Patent Application Serial No. 09/887,367 also entitled "Apparatus and Method to Metallize, Reinforce, and Hermetically Seal Multiple Optical Fibers", which was filed on June 21, 2001 as a continuation-in-part application of 09/654,459 (now abandoned). Each of the applications ~~are~~ is assigned to the same assignee and each ~~are~~ is incorporated herein by reference in its entirety.

[0041] Most preferably, the solder may be protected from moisture-induced corrosion by an outer covering of water-resistant epoxy, e.g., anhydride epoxy, in the feedthrough cavity, as

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described further in U.S. Patent Application Serial No. 09/654,459 (now abandoned). The most preferred variation may use anhydride epoxy for the outermost adhesive in the feedthrough cavity. A preferred epoxy is available from Dexter, with corporate headquarters located in City of Industry, California; Namics, with corporate headquarters located in Tokyo, Japan; and Ablestik, with corporate headquarters located in Rancho Domingues, California. Alternative variations may use other types of adhesives besides epoxy, e.g., silicone rubber compounds, polymer adhesives, and equivalents. The preferred adhesive is a thermally cured adhesive, but alternative variations may use an adhesive cured by ultraviolet light. A preferred epoxy dispenser is available from EFD Dispenser, with corporate headquarters located in East Providence, Rhode Island. However, other epoxy dispensers are available from other suppliers to dispense epoxy to implement the invention.

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[0042] FIG. 5A illustrates a cross-sectioned top view 500 of one preferable variation with a reinforcement plate 502 attached to a vertically-routed ribbon segment 304 (seen as a top edge-view) of a ribbon 202 of optical fibers. FIG. 5B illustrates an isometric view of the section of FIG. 5A with only the ribbon 304 and reinforcement plate 502 shown for clarity. The ribbon segment 304 may be attached to the reinforcement plate 502 by solder deposit 504 for lateral support. The reinforcement plate 502 may also extend through the package wall opening 306. The reinforcement plate 502 preferably extends about 10 to 150 mils (0.0254 to 0.381 cm) outside the outer wall of the package 506. Alternative variations of the invention may make the reinforcement plate 502 extend about 50 to 250 mils (0.127 to 0.635 cm), or more than about 250 mils (0.635 cm), beyond the outer wall of the package 506. The ribbon segment 304 may be attached and sealed to the package 506 by solder depositions 308 and 310. A process for reinforcing and routing through opening 306 is described further in U.S. Patent Application Serial No. 09/654,459 (now abandoned).

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